REMARKS

Office Action

In the Office Action mailed July 25, 2006, the Examiner rejected claims 1-20 under 35 U.S.C § 103(a) as being unpatentable over Meyer et al., U.S. Patent No. 5,933,812 (hereinafter "Meyer") in view of Lys et al., U.S. Publication No. 2004/0257007 (hereinafter "Lys"). For reasons set forth more fully below, the references of record do not teach or suggest the invention set forth in claims 1-20. Additionally, there is no motivation to combine any teaching of Lys with the primary reference Meyer. Indeed, as discussed more fully below, the Examiner has not proposed any combination of references, but has merely noted a difference between the RS-485 voltage protocol and the RS-232 voltage protocol without demonstrating how it results in the claimed invention.

Claim 1

Claim 1 requires that an optical receiver be coupled to a voltage converter so the voltage converter converts a first voltage signal from a diagnostic tool to a second voltage signal that operates the optical receiver in a high speed mode. These limitations are neither taught nor suggested by the Meyer reference.

In Meyer, the phototransistor (Q1) is coupled through an inverter to the receive data (RxD) line of a microprocessor as shown in FIG. 17A. In the section of specification of Meyer that discloses the operational details of this receiver, namely, col. 17, lines 20-57, no description is provided of the phototransistor being coupled to a voltage converter. Instead, the voltage range

in which the optical receiver Q1 operates is the same as the voltage range in which the microprocessor operates. Consequently, Meyer does not teach or suggest the coupling of an optical receiver to a voltage converter. Even if the inverter was viewed as a voltage converter, though Applicant maintains the inverter does not operate as a voltage converter, the output of the inverter is not used to operate the optical receiver. Therefore, Meyer does not teach or suggest the invention of claim 1.

Moreover, Meyer does not teach or suggest the coupling of an optical receiver to voltage converter so the voltage converter converts a first voltage signal to a second voltage signal for the purpose of operating the receiver in a high speed mode. The optical receiver in Meyer is not disclosed as having a high speed mode. Consequently, the Meyer reference fails to teach or suggest the operation of an optical receiver in a high speed mode or the use of a voltage converter for the purpose of generating a signal to operate the optical receiver in a high speed mode. Both limitations are required by claim 1.

In the Office Action, the Examiner referred to claim 3 of Meyer for teachings regarding an RS-232 serial data communication capability. This RS-232 serial data communication capability, however, is not provided by the portable transaction terminal that is depicted in FIG. 17A. Instead, the RS-232 serial data capability is provided by circuits on a docking station circuit board mounted in the base portion of a docking station housing. The RS-232 level signals are generated by the optical receiver in the docking station and not by the optical receiver, Q1, in the portable transaction terminal. Thus, the

electronic circuits on the docking station circuit board do not convert a first voltage signal to a second voltage signal for the purpose of operating an optical receiver in high speed mode.

The Lys reference adds nothing to the teachings of the Meyer reference. Specifically, the Examiner has cited to paragraph 0007 of the Lys reference for a teaching regarding the voltage levels used in the RS-232 data standard for communicating a logical one (1) and a logical zero (0). With reference to paragraph 0007 of the Lys reference, one should note that a discussion is set forth regarding the voltage levels used for communicating a logical zero (0) and a logical zero (1) in the RS-485 hardware protocol and the RS-232 hardware protocol. The Lys reference provides no teaching or suggestion that a voltage converter be used for converting signals from one standard to the other standard. Therefore, no voltage converter is available in the Lys reference for the Examiner to combine with the optical receiver, Q1, of the Meyer reference. Furthermore, even if such a converter was available, there is no teaching or suggestion in any reference of record that the voltage signal be converted to a second voltage level for the purpose of operating an optical receiver in a high speed mode. Consequently, combining the difference noted in the Lys reference with the optical receiver of the Meyer reference does nothing to show what would motivate one of ordinary skill in the art to use a voltage converter to convert a first voltage signal to a second voltage signal for the purpose of operating an optical receiver in a high speed mode. For at least these reasons,

claim 1 is patentable over all the references of record, either alone or in combination.

Claim 2

Claim 2 depends from claim 1 and is patentable for the reasons discussed above with respect to claim 1. Additionally, claim 2 requires that the first voltage signal be received from the power supply of the diagnostic tool and that the voltage converter be a RS-232 converter. The Meyer reference does not teach or suggest this limitation because the portable transaction terminal of the Meyer reference does not receive a voltage signal from the power supply of the docking station that is converted by a RS-232 voltage converter to a signal that is used to operate the optical receiver, Q1, in a high speed mode. As already noted, the Lys reference is unable to provide the teaching necessary to produce such a combination because the Lys reference fails to discuss voltage conversion. For at least these reasons, claim 2 is patentable over all the references of record, either alone or in combination.

Claim 3

Claim 3 depends from claim 1 and is patentable for the reasons discussed above with respect to claim 1. Additionally, claim 3 requires that the first voltage signal be comprised of a +5V reference and a ground reference and that the voltage converter generate a -12V reference from the first voltage signal. The

Meyer reference does not teach or suggest this limitation because the portable transaction terminal of the Meyer reference does not receive a voltage signal from the power supply of the docking station that is converted by a RS-232 voltage converter to a signal that is used to operate the optical receiver, Q1, in a high speed mode. As already noted, the Lys reference is unable to provide the teaching necessary to produce such a combination because the Lys reference fails to discuss voltage conversion. For at least these reasons, claim 3 is patentable over all the references of record, either alone or in combination.

Claim 4

Claim 4 depends from claim 1 and is patentable for the reasons discussed above with respect to claim 1. Additionally, claim 4 requires that the optical receiver include a phototransistor and an amplifier coupled to the phototransistor. The claim also requires the second voltage signal generated by the voltage converter be coupled to the amplifier to operate the amplifier in the high speed mode. Meyer does not teach or suggest the coupling of an amplifier to the optical receiver, Q1. Meyer certainly does not teach or suggest operation of an amplifier in a high speed mode with a signal from a voltage converter. The Lys reference does not supply any of these limitations because the Lys reference fails to discuss voltage conversion and does not disclose an optical receiver having an amplifier coupled to it that is capable of being operated in a

high speed mode. These additional reasons further support the patentability of claim 4 over all references of record, either alone or in combination.

Claim 5

Claim 5 depends from claim 4 and is patentable for the reasons discussed above with respect to claims 4 and 1. Additionally, claim 5 requires that the second voltage signal provided by the voltage converter be a negative potential reference signal. The Meyer reference fails to suggest that the optical receiver, Q1, receive a second voltage signal that is a negative potential reference signal. Additionally, the Lys reference fails to teach or suggest the coupling of a negative potential reference signal to an amplifier coupled to an optical receiver for operating the amplifier in a high speed mode. These additional reasons support the allowance of claim 5 over all the references of record, either alone or in combination.

Claim 6

Claim 6 depends from claim 5 and is patentable for the reasons discussed above with respect to claims 5, 4, and 1. Additionally, claim 6 requires that the second voltage signal provided by the voltage converter be a negative twelve (12) volt signal. The Meyer reference fails to suggest that the optical receiver, Q1, receive a second voltage signal that is a negative twelve (12) volt signal. Additionally, the Lys reference fails to teach or suggest the coupling of a negative twelve (12) volt signal to an amplifier coupled to an optical receiver for

operating the amplifier in a high speed mode. These additional reasons support the allowance of claim 6 over all the references of record, either alone or in combination.

Claim 7

Claim 7 depends from claim 4 and is patentable for the reasons discussed above with respect to claims 4 and 1. Additionally, claim 7 requires that the second voltage signal provided by the voltage converter be a negative twelve (12) volt signal. The Meyer reference fails to suggest that the optical receiver, Q1, receive a second voltage signal that is a negative twelve (12) volt signal. Additionally, the Lys reference fails to teach or suggest the coupling of a negative twelve (12) volt signal to an amplifier coupled to an optical receiver for operating the amplifier in a high speed mode. These additional reasons support the allowance of claim 7 over all the references of record, either alone or in combination.

Claim 8

Claim 8 is directed to a method for operating an optical receiver in a high speed mode. The claimed method requires a first voltage signal received from a diagnostic tool to be converted to a second voltage signal for operating the optical receiver in a high speed mode. These limitations are neither taught nor suggested by the Meyer reference.

In Meyer, the phototransistor (Q1) is coupled through an inverter to the received data (RxD) line of a microprocessor as shown in FIG. 17A. In the section of specification of Meyer that discloses the operation of this receiver, namely, col. 17, lines 20-57, no description is provided of the phototransistor being coupled to voltage converter. Even if the inverter was considered to be a voltage converter, although Applicant maintains the inverter does not operate as a voltage converter, the output of the inverter is not used to operate the optical receiver. Consequently, Meyer does not teach or suggest the coupling of an optical receiver to a voltage converter for purposes of operating the optical receiver. Moreover, Meyer does not teach or suggest that the optical receiver operate in a high speed mode. Therefore, the Meyer reference fails to suggest the use of a voltage converter for the purpose of generating a signal to operate an optical receiver in a high speed mode as required by claim 8.

In the Office Action, the Examiner referred to claim 3 of Meyer for teachings regarding an RS-232 serial data communication capability. This RS-232 serial data communication capability, however, is not provided by the portable transaction terminal that is depicted in FIG. 17A. Instead, the RS-232 serial data capability is provided by circuits on a docking station circuit board mounted in the base portion of a docking station housing. The RS-232 level signals are generated by the optical receiver in the docking station and not by the optical receiver, Q1, in the portable transaction terminal. Thus, the electronic circuits on the docking station circuit board do not convert a first

voltage signal to a second voltage signal for the purpose of operating an optical receiver in high speed mode.

The Lys reference adds nothing to the teachings of the Meyer reference. Specifically, the Examiner has cited to paragraph 0007 of the Lys reference for a teaching regarding the voltage levels used in the RS-232 data standard for communicating a logical one (1) and a logical zero (0). With reference to paragraph 0007 of the Lys reference, one should note that a discussion is set forth regarding the voltage levels used for communicating a logical zero (0) and a logical zero (1) in the RS-485 hardware protocol and the RS-232 hardware protocol. The Lys reference provides no teaching or suggestion that a voltage converter be used for converting signals from one standard to the other standard. Therefore, no voltage converter is available in the Lys reference for the Examiner to combine with the optical receiver, Q1, of the Meyer reference. Furthermore, even if such a converter was available, there is no teaching or suggestion in any reference of record that the voltage signal be converted to a second voltage level for the purpose of operating an optical receiver in a high speed mode. Consequently, combining the difference noted in the Lys reference with the optical receiver of the Meyer reference does nothing to show what would motivate one of ordinary skill in the art to use a voltage converter to convert a first voltage signal to a second voltage signal for the purpose of operating an optical receiver in a high speed mode. For at least these reasons,

claim 8 is patentable over all the references of record, either alone or in combination.

Claim 9

Claim 9 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8. Additionally, claim 9 requires that the first voltage signal be received from a power supply of the diagnostic tool and converted to a RS-232 level signal. The Meyer reference does not teach or suggest this limitation because the portable transaction terminal of the Meyer reference does not receive a voltage signal from the power supply of the docking station that is converted to a RS-232 level signal to operate the optical receiver, Q1, in a high speed mode. As already noted, the Lys reference is unable to provide the teaching necessary to produce such a combination because the Lys reference fails to discuss voltage conversion. For at least these reasons, claim 9 is patentable over all the references of record, either alone or in combination.

Claim 10

Claim 10 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8. Additionally, claim 10 requires a -12 volt reference signal be converted from a +5V reference and a ground reference. The Meyer reference does not teach or suggest this limitation because the portable transaction terminal of the Meyer reference does not receive a voltage signal from the power supply of the docking station that is converted to a -12 volt

reference signal to operate the optical receiver, Q1, in a high speed mode. As already noted, the Lys reference is unable to provide the teaching necessary to produce such a combination because the Lys reference fails to discuss voltage conversion. For at least these reasons, claim 10 is patentable over all the references of record, either alone or in combination.

Claim 11

Claim 11 depends from claim 8 and is patentable for the reasons discussed above with respect to claim 8. Additionally, claim 11 requires that the second voltage signal be coupled to an amplifier that is coupled to an optical receiver. Meyer does not teach or suggest the coupling of a converted voltage signal to an amplifier of the optical receiver, Q1. Indeed, the optical receiver of the Meyer reference does not have an amplifier. Even if the Examiner argued that the inverter is an amplifier, this ground of rejection would fail because no converted voltage is coupled to the inverter. The Lys reference does not supply any of these limitations because the Lys reference fails to discuss voltage conversion and does not disclose the coupling of a converted voltage signal to an amplifier of an optical receiver. These additional reasons further support the patentability of claim 11 over all references of record, either alone or in combination.

Claim 12

Claim 12 depends from claim 11 and is patentable for the reasons discussed above with respect to claims 11 and 8. Additionally, claim 12 requires that the conversion generate a negative potential reference signal. The Meyer reference fails to suggest a voltage conversion result in a negative potential reference signal that is coupled to the optical receiver. Additionally, the Lys reference fails to teach or suggest the coupling of a negative potential reference signal to an amplifier of an optical receiver. These additional reasons support the allowance of claim 12 over all the references of record, either alone or in combination.

Claim 13

Claim 13 depends from claim 12 and is patentable for the reasons discussed above with respect to claims 12, 11, and 8. Additionally, claim 13 requires that the voltage conversion generate a voltage signal having a negative potential of at least -12 volts. The Meyer reference fails to teach or suggest a voltage conversion that generates a voltage signal having a negative potential of at least -12 volts. Additionally, the Lys reference fails to teach or suggest the coupling of a signal having a negative of at least -12 volts to an amplifier of an optical receiver. These additional reasons support the allowance of claim 13 over all the references of record, either alone or in combination.

Claim 14

Claim 14 depends from claim 11 and is patentable for the reasons discussed above with respect to claims 11 and 8. Additionally, claim 14 requires that the voltage conversion generate a signal having a negative potential of approximately -12 volts. The Meyer reference fails to teach or suggest a voltage conversion that generates a signal having a negative potential of approximately -12 volts. Additionally, the Lys reference fails to teach or suggest the coupling of a signal having a negative potential of approximately -12 volts to an amplifier of an optical receiver. These additional reasons support the allowance of claim 14 over all the references of record, either alone or in combination.

Claim 15

Claim 15 is directed to a diagnostic system that communicates with an appliance through a low intensity optical interface. The claim requires that the system includes a diagnostic tool having a communication interface and a communication probe that includes a voltage converter that is coupled to the communication interface of the diagnostic tool through an electrical cable. The limitations of claim 15 are not taught or suggested by the Meyer reference. Specifically, as noted above, with respect to claims 1 and 8, the portable transaction terminal of the Meyer reference communicates with the docking station through an optical interface. Therefore, the portable transaction terminal of Meyer does not couple to the communication interface of the docking station in Meyer through an electrical cable.

Meyer does teach a docking station 20 that is coupled to a transaction terminal 30 by a cable. (*Meyer,* FIG. 1) The transaction terminal includes a communication interface for communication with the docking station 20. (*Meyer,* claim 3). Nevertheless, Meyer does not disclose or suggest that the docking station include a voltage converter that is coupled to the communication interface of the transaction terminal for converting a voltage signal to operate the optical receiver in the docking station in a high speed mode. Therefore, Meyer does not teach or suggest the invention of claim 15.

The Lys reference fails to provide any teaching or suggestion that would provide a voltage converter in the docking station of the portable transaction terminal of Meyer. Lys also fails to teach or suggest operating an optical receiver in a high speed mode with a converted voltage signal. For at least these reasons, claim 15 is patentable over all the references of record, either alone or in combination.

Claim 16

Claim 16 depends from claim 15 and is patentable for the reasons discussed above with respect to claims 15. Additionally, claim 16 requires that the diagnostic tool be a handheld computer. The Meyer reference does not teach or suggest the use of a diagnostic tool in a diagnostic system. The Examiner has referred to FIG. 1 of the Meyer reference as supporting the ground of rejection for claim 16. As disclosed in the Meyer reference, the host computer 60 is coupled to a transaction terminal 30 through the phone line connection 31

and a public switched telephone network 50. *Meyer,* col. 1, line 59-col. 2, line 6. The Meyer reference does not teach or suggest that the host computer act as a diagnostic tool to the transaction terminal. In fact, none of the components in Meyer are disclosed as having a voltage converter for generating a signal that is used to operate an optical receiver at a high speed mode.

Additionally, the Examiner refers to the host computer 60 as being a personal digital assistant, however, those words are not used in the patent. Although the docking station 20 is coupled by a cable to the transaction terminal 30, the docking station 20 does not operate as a probe. Likewise, the portable transaction terminal 10 does not have a voltage converter that is coupled to the communication interface of a diagnostic tool through an electrical cable. For at least these reasons, claim 16 is patentable over the references of record, either alone or in combination.

Claim 17

Claim 17 depends from claim 15 and is patentable for at least the reasons discussed above with respect to that claim. Additionally, claim 17 requires that the diagnostic tool be a personal digital assistant. As already noted above, the Meyer reference does not include the words "personal digital assistant." Therefore, the Meyer reference neither teaches nor suggests the use of a diagnostic tool that is a personal digital assistant in a diagnostic system. Moreover, the Meyer reference does not teach or suggest a personal digital assistant having a communication interface that is coupled by an electrical cable

to the voltage converter of a communication probe. The Lys reference has no teachings regarding a personal digital assistant being used as a diagnostic tool or of a voltage converter in a probe being coupled to the communication interface of a personal digital assistant. For at least these reasons, claim 17 is patentable over all the references of record, either alone or in combination.

Claim 18

Claim 18 depends from claim 15 and is patentable for at least the reasons discussed above with respect to claim 15. Additionally, claim 18 requires that the voltage converter of the probe be coupled through the electrical cable to the power supply of the diagnostic tool. As noted above with respect to claims 15, 16, and 17, the Meyer reference fails to teach or suggest the coupling of a voltage converter in a communication probe with a diagnostic tool through an electrical cable. The additional limitation that the voltage converter be coupled to a power supply of the diagnostic tool is an additional limitation that is neither taught nor suggested by any of the references of record. For at least these reasons, claim 18 is patentable over all the references of record, either alone or in combination.

Claim 19

Claim 19 depends from claim 15 and is patentable for the reasons discussed above with respect to claim 15. Additionally, claim 19 requires that

the voltage converter be a RS-232 interface integrated circuit that generates a -12 volt signal that is coupled to the optical receiver. Meyer does not teach or suggest this limitation because the portable transaction terminal of the Meyer reference does not have a RS-232 interface integrated circuit. Therefore, it does not have a RS-232 interface circuit that generates a -12 volt signal that is coupled to the optical receiver. As already noted, the Lys reference is unable to provide the teaching necessary to produce such a combination because the Lys reference fails to discuss voltage conversion. For at least these reasons, claim 19 is patentable over all the references of record, either alone or in combination.

Claim 20

Claim 20 depends from claim 19 and is patentable for the reasons discussed above with respect to claims 19 and 15. Additionally, claim 20 requires that the optical receiver include a phototransistor and an amplifier coupled to the phototransistor. The claim also requires that the -12 volt signal generated by the voltage converter be coupled to the amplifier to operate the amplifier in a high speed mode. Meyer does not teach or suggest the coupling of an amplifier to the optical receiver, Q1. Moreover, the Meyer reference fails to teach or suggest the coupling of a -12 volt signal to the amplifier of an optical receiver to operate the amplifier in a high speed mode. The Lys reference does not supply any of these limitations because the Lys reference fails to discuss the voltage conversion and also does not disclose an optical receiver having an amplifier coupled to it that is capable of being operated in a high speed mode.

These additional reasons further support the patentability of claim 20 over all references of record, either alone or in combination.

Conclusion

For the reasons set forth above, all pending claims are patentable over all references of record, either alone or in combination. Reexamination and allowance of all pending claims are earnestly solicited.

Respectfully submitted,
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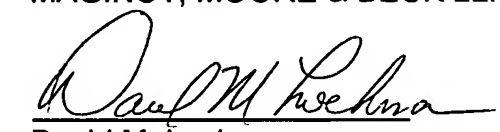

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